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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/523,957	02/04/2005	Walter Stieglbauer	STIEGLBAUER ET AL-2	1580
25889	7590	10/20/2006	PCT	
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EXAMINER KERNS, KEVIN P				
ART UNIT			PAPER NUMBER	
1725				

DATE MAILED: 10/20/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/523,957

Applicant(s)

STIEGLBAUER ET AL.

Examiner

Kevin P. Kerns

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 06 October 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 13-30 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 13-30 is/are rejected.
- 7) ☒ Claim(s) 13,17 and 24 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 04 February 2005 and 06 October 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_.

## DETAILED ACTION

### *Specification*

1. Applicant is reminded of the proper language and format for an abstract of the disclosure.

The abstract should be in narrative form and generally limited to a single paragraph on a separate sheet within the range of 50 to 150 words. It is important that the abstract not exceed 150 words in length since the space provided for the abstract on the computer tape used by the printer is limited. The form and legal phraseology often used in patent claims, such as "means" and "said," should be avoided. The abstract should describe the disclosure sufficiently to assist readers in deciding whether there is a need for consulting the full patent text for details.

The language should be clear and concise and should not repeat information given in the title. It should avoid using phrases which can be implied, such as, "The disclosure concerns," "The disclosure defined by this invention," "The disclosure describes," etc.

In this instance, the abstract includes the legal terms "means" and "said", as well as a phrase that can be implied. To correct the latter issue, replace "The invention relates to a" with "A" in the 1<sup>st</sup> line of the abstract.

2. The disclosure is objected to because of the following informalities in the "clean copy" of the substitute specification: on page 5, 10<sup>th</sup> line, replace both instances of "laquer" with "lacquer". On page 5, 13<sup>th</sup> line, delete "of" after "are". On page 9, 5<sup>th</sup> and 6<sup>th</sup> lines, it is believed that the new reference number "16" in Figure 1 should be inserted after "components" and/or "devices", respectively. Appropriate correction is required.

### *Claim Objections*

3. Claims 13, 17, and 24 are objected to because of the following informalities: in claim 13, 2<sup>nd</sup> line from the end of the claim, insert ", and" after "shape". In claim 17, 2<sup>nd</sup>

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and 3<sup>rd</sup> lines, replace "laquer" with "lacquer". In claim 24, 3<sup>rd</sup> line, insert "of" after "unit".

Appropriate correction is required.

***Claim Rejections - 35 USC § 112***

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. Claims 13-30 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

With regard to independent claim 13, the applicants have inappropriately used the incorrect and indefinite limitation "during said step of welding" in the 10<sup>th</sup> line of the claim, when this limitation should instead read "after said step of welding" ("after said step of welding" is supported in the last paragraph on page 2 of the substitute specification; however, "during said step of welding" would not only lack support in the originally filed specification, but would also render the invention impossible to carry out). Appropriate correction (replacement of "during" with "after" in the 10<sup>th</sup> line) is required.

A broad range or limitation together with a narrow range or limitation that falls within the broad range or limitation (in the same claim) is considered indefinite, since the resulting claim does not clearly set forth the metes and bounds of the patent protection desired. See MPEP § 2173.05(c). Note the explanation given by the Board of Patent Appeals and Interferences in *Ex parte Wu*, 10 USPQ2d 2031, 2033 (Bd. Pat. App. & Inter. 1989), as to where broad language is followed by "such as" and then

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narrow language. The Board stated that this can render a claim indefinite by raising a question or doubt as to whether the feature introduced by such language is (a) merely exemplary of the remainder of the claim, and therefore not required, or (b) a required feature of the claims. Note also, for example, the decisions of *Ex parte Steigewald*, 131 USPQ 74 (Bd. App. 1961); *Ex parte Hall*, 83 USPQ 38 (Bd. App. 1948); and *Ex parte Hasche*, 86 USPQ 481 (Bd. App. 1949). In the present instance, claim 13 recites the broad recitation "quality of spot welds", and the claim also recites "particularly for robotic applications" which is the narrower statement of the range/limitation.

With regard to claims 13, 18-23, and 28-30, the phrase "welding spot" is indefinite, as this phrase is not conventionally used in the welding field. The applicants are instead suggested to replace "the welding spot" with the phrase "spot weld(s)".

With regard to claims 14 and 25-27, it is unclear what is meant by "tuning the material of the strip to the materials of the metal sheets". Should "tuning" be revised to include physically/chemically "matching" or "being compatible" with physical/chemical properties of the other claimed material(s)?

Claim 14 recites the limitation "the temperature". There is insufficient antecedent basis for this limitation in the claim.

Claim 21 recites the limitations "the dimensions", "the deposited weld", and "the actual dimensions". There is insufficient antecedent basis for these limitations in the claim.

Claim 22 recites the limitation "the deposited reference weld". There is insufficient antecedent basis for this limitation in the claim.

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Claim 23 recites the limitation "the determined dimensions". There is insufficient antecedent basis for this limitation in the claim.

Claim 24 recites the limitation "the welding process". There is insufficient antecedent basis for this limitation in the claim.

***Claim Rejections - 35 USC § 103***

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

8. Claims 13-30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fujii et al. (US 6,057,523) in view of Simmons (US 3,940,624), and further in view of Mueller et al. (US 5,961,854).

Fujii et al. disclose a method of controlling welding conditions of a resistance spot welder, in which the method includes the steps of providing metal sheets (workpieces 11 of steel, aluminum, galvanized steel etc.) to be welded to each other by a resistance spot welder via providing current from a welding power supply 7 to welding electrodes 8; assessing the workpieces to be welded by an evaluation means that includes digital signal processing, detection, simulator, comparison (from a database), and control portions (combination of items 1-6 in Figure 1) to obtain accurate detection and control of the welding conditions during and after the welding process (abstract; column 3, lines 9-53; column 4, line 12 through column 6, line 36; and Figure 1). Fujii et al. do not disclose the use of a strip or foil between the electrodes and metal sheets, with the strip or foil conveyed past the electrodes and metal sheets, in combination with the detection means to monitor spot welds.

However, Simmons discloses a method for testing the integrity of a weld, in which the method includes the steps of forming spot weld(s) 24 and providing detection means that include an optical detector 60 (capable of obtaining an image/reproduction of the spot weld), a source 40 of infrared rays, and a small volume of liquid crystals 48 placed on a MYLAR film 46 (strip or foil), such that the MYLAR film (strip or foil) in combination with the detection means are advantageous for measuring and indicating the transfer characteristics, including the heat transfer characteristic of the spot weld and for determining the acceptability of the spot weld (abstract; column 1, lines 57-68; column 2, lines 1-53 and 66-68; column 3, line 1 through column 4, line 55; and Figures 1 and 2).

It would have been obvious to one of ordinary skill in the art at the time the applicants' invention was made to modify the method of controlling welding conditions of a resistance spot welder, as disclosed by Fujii et al., by adding the strip or foil in combination with the detection means to monitor spot welds, as taught by Simmons, in order to measure and indicate the transfer characteristics, including the heat transfer characteristic of the spot weld, thus determining the acceptability of the spot weld (Simmons; abstract; column 1, lines 57-68; column 2, lines 1-27; column 3, lines 2-9; and column 4, lines 45-55).

Neither Fujii et al. nor Simmons discloses that the strip or foil is to be conveyed between the electrodes and metal sheets.

However, Mueller et al. disclose a method for testing the integrity of a weld, in which the method includes the steps of forming spot weld(s) upon providing current to welding electrodes 1 and electrode caps 4; and providing conveying rolls (9a,9b) that convey intermediate foil sections 10 that comprise foil strips 5 of high nickel content between surfaces of aluminum, magnesium, or copper sheets 3, such that the conveyed foil strips 5 are advantageous for reducing weld defects by protecting the electrodes and electrode caps (abstract; column 1, lines 10-16 and 61-67; column 2, lines 1-31 and 44-67; column 3, lines 1-67; column 4, lines 1-15; and Figure).

It would have been obvious to one of ordinary skill in the art at the time the applicants' invention was made to modify the method of controlling welding conditions of a resistance spot welder, as disclosed by Fujii et al., by adding the strip or foil in combination with the detection means to monitor spot welds, as taught by Simmons, in



order to measure and indicate the transfer characteristics, including the heat transfer characteristic of the spot weld, thus determining the acceptability of the spot weld, and by further adding intermediate foil sections that comprise conveyed foil strips, as taught by Mueller et al., in order to reduce weld defects by protecting the electrodes and electrode caps (Mueller et al.; abstract; column 1, lines 60-67; column 2, lines 1-31; and column 4, lines 12-15).

### ***Response to Arguments***

9. The examiner acknowledges the applicants' amendment, substitute specification, and replacement drawing sheet, all of which were received by the USPTO on October 6, 2006. The replacement drawing sheet is approved by the examiner, thus overcoming prior drawing objections, but an explanation of new reference number 16 should be given in the substitute specification (perhaps on page 9 – see above section 2).

Although the prior specification objections have been overcome by the substitute specification, the applicants are advised that the abstract (previously objected to) has not been amended (see above section 1), and additional specification objections have been raised by the substitute specification (see above section 2). Cancellation of claims 1-12 overcome prior claim objections, but new claim objections to claims 13, 17, and 24 have been raised (see above section 3). A majority of the 35 USC 112, 2<sup>nd</sup> paragraph rejections have been overcome by the amendment, but some rejections remain, while other have been introduced, in new claims 13-30 (see above section 5). Prior rejections based on the Watanabe et al. reference have been withdrawn due to claim

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amendments. The applicants have cancelled claims 1-12, and added new claims 13-30. Claims 13-30 are currently under consideration in the application.

10. Applicants' arguments with respect to claims 1-12 (now claims 13-30) have been considered but are moot in view of the new ground(s) of rejection.

### ***Conclusion***

11. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dr. Kevin P. Kerns whose telephone number is (571)

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272-1178. The examiner can normally be reached on Monday-Friday from 8:00am-5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Patrick Ryan can be reached on (571) 272-1292. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Kevin P. Kerns *Kevin Kerns 10/17/06*  
Primary Examiner  
Art Unit 1725

*KPK*  
kpk  
October 17, 2006